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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/589,477	08/14/2006	Jae Seop Song	SHN-0049	8370

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EXAMINER	
RADKOWSKI, PETER	
ART UNIT	**PAPER NUMBER**
2883	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/589,477	SONG, JAE SEOP	
	Examiner	Art Unit	
	Peter Radkowski	2883	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 August 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-32* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7;12,16,19-24 and 27-31* is/are rejected.

7)☒ Claim(s) *8-11,13-15,17-18,25-26 and 32* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *14 August 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *8/14/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Detailed Office Action

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 2, 12, 24, and 27 – 31

2. **Claims 1, 2, 12, 24, and 27 - 31 are rejected** under 35 U.S.C. 103(a) as being obvious over Bloom (5,871,559), in view of Park et al. (Park, H.S. et al., "A novel method of removing optical fiber coating with hot air stream," 1999, Optical Fiber Communication Conference, 1999).

From hereinafter, "Park" will stand-in for "Park et al."

Regarding Claim 1, Bloom teaches an optical fiber treating apparatus comprising a base and a peeling-off part, the peeling-off part comprising a heat source [136]. (See Bloom, col. 11, l. 66 through col 12. 12])

Further regarding Claim 1, Bloom does not explicitly teach that the heat-applying peeling-off part relies upon a difference in the thermal deformation of the inside and the outside fiber cover.

However, Park teaches that peeling off part uses a difference in difference of thermal deformation between the inside outer cover and the outside outer cover. (See Park, Sec. II, Par. 2, l. 2 through par. 3, l. 5)

Since Bloom and Park both teach fiber treating devices, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to modify the device of Bloom to have the thermal deformation taught by Park because thermal-stresses can completely remove optical fiber coatings without leaving microparticles on the surface; (See Park, Sec. II, par. 3, ll. 4-5); because this makes a rinsing process unnecessary. One would have been motivated to make this modification because bypassing the rinsing processes may improve the cost efficiency of the overall device. (See Park, Sec. III, par. 1, ll. 1 and 6)

Regarding Claim 2, Bloom, in view of Park, as applied to Claim 1, does not explicitly teach that the temperature of the heated air is set to a temperature value falling between 400 and ~500 C. However, at the time of the invention, Park taught a heated air temperature that is less than or equal to ~ 600 C. Consequently, ~500 C lies within the temperature range specified by the prior art; and it would have been obvious to one having ordinary skill in the art at the time of the invention to modify Bloom, in view of Park, to have the temperature of the heated air set between 400 and ~500 C because this range falls within the upper-bounded (not too high) temperature range specified by the prior art such that the thermal stress can completely remove the coating off the optical fiber without leaving microparticles on the surface; (See Park, Sec. II, par. 3, ll. 4-5; and See In re Aller, 105 USPQ 233 (determining the optimum or workable ranges involves only routine skill in the art).

Regarding Claim 12, Bloom, in view of Park, as applied to Claim 1, teaches a cutting means, splicer/cutter [130], positioned on the base at a side of the outer cover peeling-off part, [136] for clamping the optical fiber and for cutting the clamped optical fiber [10]. (See Bloom, figs. 1 and 6g)

Regarding Claim 24, Bloom, in view of Park, as applied to Claim 12, teaches a control panel [36] for controlling processes for peeling-off of outer cover, cutting and sleeve welding including the gripping and movement of the fiber as well as the position and intensity of heat sources. (See Bloom, fig. 1; and col. 2, ll. 43 – 66)

Regarding Claims 27 and 31, Bloom, in view of Park, as applied to Claim 12, teaches an optical fiber treatment apparatus such that:

- Heated air is discharged downward (perpendicular) to the fiber axis; (See Park, Sec. II, par. 2, ll. 4-6); (as cited in Claim 27);
- The heated air discharge section is shorter than the outer cover removing section; and the optical fiber is moved with respect to the heated air discharging section; (See Park, Sec. III, par. 1, ll. 5 – 7).

Since Bloom and Park both teach fiber treating devices, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to modify the device of Bloom to have the configuration taught by Park because the resultant configuration can completely remove optical fiber coatings without leaving microparticles on the surface. (See Park, Sec. II, par. 3, ll. 4-5) because this makes a rinsing process unnecessary. One would have been motivated to make this modification because bypassing the rinsing processes may improve the cost efficiency of the overall device. (See Park, Sec. III, par. 1, ll. 1 and 6).

Regarding Claim 28, Bloom, in view of Park, as applied to Claim 12, teaches the control of a driving part which effects the movement of the position and intensity of heat sources [136] . (See Bloom, figs. 6f, 6g, 6h; and col. 11, l. 62 – col. 12, l. 4)

Regarding Claim 29, Bloom, in view of Park, as applied to Claim 12, teaches the control of a driving part which effects the gripping and movement of the optical fibers. (See Bloom, figs. 6f, 6g, 6h; and col. 11, l. 62 – col. 12, l. 4)

Regarding Claim 30, Bloom, in view of Park, as applied to Claim 12, teaches that the length of the heated air discharging section is equal to the length of the outer cover removing section. (See Bloom, figs. 6f, 6g, 6h; and col. 11, l. 62 – col. 12, l. 4)

Claims 1 and 3 – 7

3. **Claims 1 and 3 – 7 are rejected** under 35 U.S.C. 103(a) as being obvious over Bloom (5,871,559), in view of Park et al. (Park, H.S. et al., "A novel method of removing optical fiber coating with hot air stream," 1999, Optical Fiber Communication Conference, 1999), and further in view of Andersen et al. (4,764,662).

From hereinafter, "Andersen" will stand-in for "Andersen et al."

Regarding Claim 1, Bloom, in view of Park, teaches an optical fiber treating apparatus comprising a base and a peeling-off part, the peeling-off part comprising a heat source [136]. (See above.)

Regarding Claims 3 - 6, Bloom, in view of Park, as applied to Claim 1, does not explicitly teach:

- An optical fiber apparatus, as applied to Claim 1, comprising a heater that heats hot air injected from the outside and eventually discharged back to the outside; (as cited in Claim 3);
- The heater, as applied to Claim 3, further comprising a blast pipe and hollow body for delivering and removing the hot air; (as cited in Claim 4);
- The heater, as applied to Claim 4, further comprising a coil-type heating body; (as recited in Claim 5); and
- The coil-type heating body, as applied to Claim 5, further comprising a twisted shape of 3 or more angles; (as recited in Claim 6).

However, Andersen teaches an optical fiber apparatus having an oven [47]:

- into which injected air [57] flows from the outside, whereupon it is heated, delivered, and discharged to the outside [35]; (as recited in Claim 3);
- such that said injected air [57] flows from the outside through a hollow-body and blast pipe [90], where the injected air is heated then delivered; (as applied to Claim 4);
- such that, when said injected air [57] traverses said hollow-body and blast pipe [90], said heated air is discharged where it is heated by a heater body [116] containing a silica-embedded coil-shaped nichrome wire; (as recited in Claims 6 and 7).

(See Andersen, figs. 5 – 8, and 10A-C; and col. 6, ll. 4-8).

Since Bloom, Park and Andersen teach fiber treating devices, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to modify the device of Bloom, in view of Park, to have the oven configuration taught by Andersen because this configuration allows optical fiber treatments to incorporate time-saving techniques; (See Andersen, col. 2, ll.

13-15); originally developed for metal conductor wires; (See Andersen, col. 4, ll. 10-12). One would have been motivated to make this modification because the ability to use copper wire techniques to modify an optical fiber apparatus may improve the compatibility and cost-efficiency of optical fiber devices incorporated into mixed optical-copper wire networks.

Regarding Claim 7, the optical fiber apparatus of Bloom, in view of Park, and further in view of Andersen, as applied to Claim 3, teaches a clamping means which further comprises a sliding guide having a straight line in front of the heated air discharging opening.

Specifically, Bloom teaches a system of clamp assemblies [16] and [18] which define a stripping region [134] on a covered fiber [10a] and, by sliding motion of supporting arms [120d], which can be moved linearly in front of the stripping device [136]; (See Bloom, fig. 6, col. 11, l. 57– col. 12, l. 12).

Claims 1, 12, and 16

4. **Claims 1, 12, and 16 are rejected** under 35 U.S.C. 103(a) as being obvious over Bloom (5,871,559), in view of Park et al. (Park, H.S. et al., "A novel method of removing optical fiber coating with hot air stream," 1999, Optical Fiber Communication Conference, 1999), and further in view of Murakami et al. (2002/0100356).

From hereinafter, "Murakami" will stand-in for "Murakami et al."

Regarding Claim 1, Bloom, in view of Park, teaches an optical fiber treating apparatus comprising a base and a peeling-off part, the peeling-off part comprising a heat source [136]. (See above.)

Regarding Claim 12, Bloom, in view of Park, as applied to Claim 1, teaches a cutting means, a splicer/cutter [130], for clamping the optical fiber and for cutting the clamped optical fiber [10]. (See above.)

Regarding Claim 16 , Bloom in view of Park, as applied to Claim 12, does not explicitly teach the cutting means comprises an ultrasonic cutter.

However, Murakami teaches a cutting means comprising an ultrasonic cutter [22]. (See Murakami, fig. 1 and col. 7, ll, 33-37).

Since Bloom, Park and Murakami teach fiber stripping and cutting devices, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to modify the device of Bloom, in view of Park, by substituting the ultrasonic cutting features Murakami because this would have yielded predictable results.

Claims 1, 12, and 19 – 23

5. **Claims 1, 12, and 19 – 23 are rejected** under 35 U.S.C. 103(a) as being obvious over Bloom (5,871,559), in view of Park et al. (Park, H.S. et al., "A novel method of removing optical fiber coating with hot air stream," 1999, Optical Fiber Communication Conference, 1999), and further in view of Andersen et al. (4,764,662).

Regarding Claim 1, Bloom, in view of Park, teaches an optical fiber treating apparatus comprising a base and a peeling-off part, the peeling-off part comprising a heat source [136]. (See above.)

Regarding Claim 12, Bloom, in view of Park, as applied to Claim 1, teaches a cutting means, a splicer/cutter [130], for clamping the optical fiber and for cutting the clamped optical fiber [10]. (See above.)

Regarding Claims 19 - 23, Bloom, in view of Park, does not explicitly teach:

- an optical fiber apparatus, as applied to Claim 12, in which a sleeve welding part which envelopes the peeled, cut and spliced optical fiber; (as cited in Claim 19);
- an optical fiber apparatus with a sleeve welding part, as applied to Claim 19, further comprising a heating room in which the sleeve is shrunk; (as cited in Claim 20);
- an optical fiber apparatus with a sleeve welding part with a heating room, as applied to Claim 20, further comprising a heater; (as cited in Claim 21);
- an optical fiber apparatus, as applied to Claim 19, in which a sleeve welding part has a heating room with a heater and a door; (as cited in Claim 22);
- an optical fiber apparatus, as applied to Claim 19, in which a sleeve welding part has a heating room with a heater and a door, and the sleeve welding part comprises another pealing off heater; (as cited in Claim 23).

However, Andersen teaches an optical fiber apparatus having an oven [47]:

- an optical fiber apparatus[10] in which a sleeve welding part [47] which envelopes the peeled, cut and spliced optical fiber [82] in a sleeve [84]; (as cited in Claim 19);
- an optical fiber apparatus with a sleeve welding part, as applied to Claim 19, further comprising a heating room [92]in which the sleeve is shrunk; (as cited in Claim 20);
- an optical fiber apparatus with a sleeve welding part with a heating room, as applied to Claim 20, further comprising a heater [47]; (as cited in Claim 21);

- an optical fiber apparatus, as applied to Claim 19, in which a sleeve welding part has a heating room [92] with a heater [47] and a door [130]; (as cited in Claim 22);
- an optical fiber apparatus, as applied to Claim 19, in which a sleeve welding part has a heating room [92] with a heater [47] and a door [130], and the sleeve welding part comprises another pealing off heater; (as cited in Claim 23).

(See Andersen, figs. 5 – 8, and 10A-C; and col. 6, ll. 4-8).

Since Bloom, Park and Andersen teach fiber treating devices, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to modify the device of Bloom, in view of Park, to have the oven configuration taught by Andersen because this configuration allows optical fiber treatments to incorporate time-saving techniques; (See Andersen, col. 2, ll. 13-15); originally developed for metal conductor wires; (See Andersen, col. 4, ll. 10-12). One would have been motivated to make this modification because the ability to use copper wire techniques to modify an optical fiber apparatus may improve the compatibility and cost-efficiency of optical fiber devices incorporated into mixed optical-copper wire networks.

Allowable Subject Matter

6. **Claims 8-11, 13-15, 17-18, 25-26, and 32 are objected to as being dependent upon a rejected base claim**, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is as examiner's statement for reasons for allowance:

Claim 8 would be allowable because prior art of record, taken alone or in combination, does not anticipate or fairly suggest an optical fiber treatment apparatus wherein the clamp

means comprises: a clamp bundle connected on an axis of the sliding guide to perform selectively a straight movement and a rotational movement; a finger base having a receiving groove for positioning the optical fiber on the lower side of the clamp bundle; a finger connected by a hinge and for clamping the optical fiber in the receiving groove on the upper side of the finger base; a torsion spring elastically connected the hinge to apply always elasticity in a direction for unclamping the finger; and a finger operating lever rotatably connected the finger base in the rear of the finger to clamp the finger through a rotation operation; in combination with the other recited limitations in the claim and its base claims. **Claim 9 would be allowable** by virtue of its dependence on Claim 8.

Claim 10 would be allowable because prior art of record, taken alone or in combination, does not anticipate or fairly suggest an optical fiber treatment apparatus wherein the clamp means comprises: a tension controlling means for adjusting a tension of the clamped optical fiber by moving the tension controlling means centering around an axis of an fixing axis by a clearance in the equally divided clamp bundles; in combination with the other recited limitations in the claim and its base claims. **Claim 11 would be allowable** by virtue of its dependence on Claim 10.

Claim 13 would be allowable because prior art of record, taken alone or in combination, does not anticipate or fairly suggest an optical fiber treatment apparatus wherein the cutting means comprises: a body having a straight guiding groove perpendicular to the sliding guide and installed on a side of base 10, the side being not faced to the heater and included in a straight section of the clamp means; a slider connected in the straight guiding groove of the body; a slider controlling means provided to both of the body and the slider to control a forward and

backward movement of the slier to make it possible to scratch the optical fiber when the clamp means in a cutting position, and to maintain the backward movement of the slider for cutting the optical fiber; a cutter, mounted on the slider having the slider controlling means, for scratching a circumference of the optical fiber along a movement of the slider; a press means operated in the direction of rotating axis on the optical fiber scratched by the cutter to cut the scratched portion of the optical fiber; and a cover rotatably connected to a side of the body and pivoted on the hinge to control the forward and backward movement of the slider, and to control the rise and fall of the press means in connection with the forward and backward movement of the slider; in combination with the other recited limitations in the claim and its base claims. **Claims 14 and 15 would be allowable** by virtue of their dependence on Claim 13.

Claim 17 would be allowable because prior art of record, taken alone or in combination, does not anticipate or fairly suggest an optical fiber treatment apparatus wherein the ultrasonic cutter means comprises: a body mounted on the base to be straight to the clamp means, the body having a slidably connected guide axis, the guide axis being moved in straight in paralled to a length direction of the clamped optical fiber; a sliding body slidably connected to move forward and backward with respect to the clamped optical fiber on the upper part of the body, and having a stopper for limiting the forward and backward movement to the body in the rear; a damper installed at the rear of the body to interfere with the stopper at all times, and providing a reduced forward moving force to the sliding body through a spring pushing the sliding body and a piston generating an air resistance; a cutting lever rotated by a rotating axis at the front of the body, and providing a reduced backward moving force to the sliding body by overcoming the damper by means of an interfering protrusion projected from the sliding body in a rotating

position; and a cutter installed on the upper part of the sliding body to be operated with the operation of the damper and the cutting lever, and cutting the optical fiber by using a vibration from an ultrasonic oscillator; in combination with the other recited limitations in the claim and its base claims.

Claim 18 would be allowable because prior art of record, taken alone or in combination, does not anticipate or fairly suggest an optical fiber treatment apparatus comprising an exhaust fan connected to the exhaust pipe, in the base; in combination with the other recited limitations in the claim and its base claims.

Claim 25 would be allowable because prior art of record, taken alone or in combination, does not anticipate or fairly suggest an optical fiber treatment apparatus wherein the control panel comprises: a key pad for inputting requirements for turning on/off electric power, setting of heating temperature and processes for peeling-off of outer cover and welding of cut sleeve; a temperature sensing part, installed on a side of a space, for sensing air heated by heater or the sleeve heater in the space; a control part for receiving the temperature signal sensed by the temperature sensing part in real time, and controlling an operation of the heater or the sleeve heater and an operation of a driver for moving a cutting means when a difference between the sensed temperature and the set up temperature being sensed; and the driver for driving the cutting means for moving the heater, the sleeve heater and the cutting means through a signal from the control part; in combination with the other recited limitations in the claim and its base claims. **Claim 26 would be allowable** by virtue of its dependence on Claim 25.

Claim 32 would be allowable because prior art of record, taken alone or in combination, does not anticipate or fairly suggest an optical fiber treatment apparatus wherein the heater

comprises: a passage forming pipe connected between the housing and the heating body to go and return air injected though a closing body from the inner circumference of the housing and the heating body two time and more, and to discharge the air to the nozzle; in combination with the other recited limitations in the claim and its base claims.

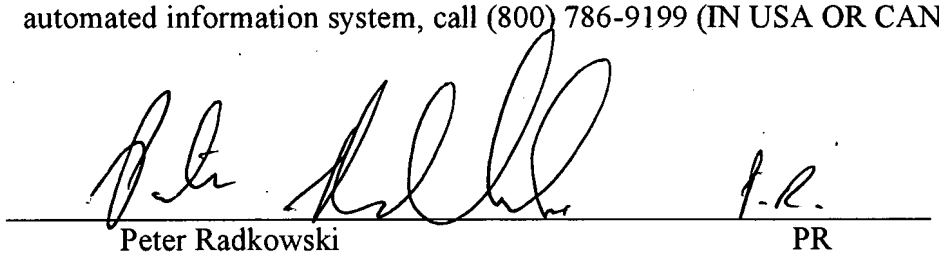
Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Pacey et al. (4,274,707); and Song (7,070,078).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter Radkowski whose telephone number is (571) 270-1613. The examiner can normally be reached on Monday - Thursday, 8 AM to 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G. Font, can be reached on (517) 272-2415. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, See http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at (866) 217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call (800) 786-9199 (IN USA OR CANADA) or (571) 272-1000.



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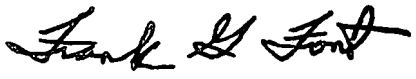

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